

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

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Listing of Claims:

1. (currently amended) A pigment-based inkjet ink set comprising a black ink and at least one color ink, said black ink including at least one black pigment, at least one cosolvent, water, optionally at least one water-soluble surfactant/amphiphile, and a polymer, wherein said polymer comprises a hydrolyzed form of styrene-maleic anhydride copolymer and wherein said at least one color ink includes a component selected from the group consisting of multivalent salts and organic acids that interacts with said polymer at appropriate pH to control black to color bleed by rendering said pigment dispersed with said polymer in said black ink insoluble by transforming said polymer into a water-insoluble protonated form,

and wherein said organic acids are selected from the group consisting of: polyacrylic, acetic, glycolic, malonic, malic, maleic, ascorbic, succinic, glutaric, fumaric, citric, tartaric, lactic, sulfonic, ortho-phosphoric acids and mixtures thereof.

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2. (original) The inkjet ink set of Claim 1 wherein said black pigment has a concentration in said ink of about 0.001 to 10 wt%.

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3. (original) The inkjet ink of Claim 1 wherein said black pigment is self-dispersed.

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4. (original) The inkjet ink set of Claim 1 wherein said cosolvent has a concentration in said ink of about 0.01 to 50 wt%.

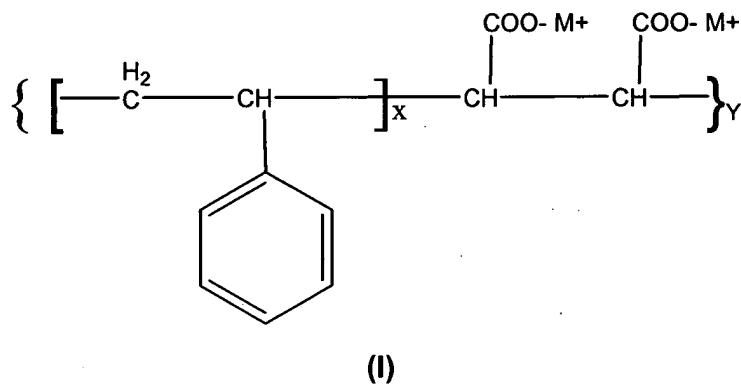
5. (original) The inkjet ink set of Claim 1 wherein said at least one surfactant/amphiphile has a concentration in said ink of up to 40 wt%.

6. (original) The inkjet ink set of Claim 5 wherein said at least one surfactant/amphiphile has a concentration of about 0.1 to 5 wt%.

7. (original) The inkjet ink set of Claim 1 wherein said water comprises
5 the balance of said ink.

8. (original) The inkjet ink set of Claim 1 wherein said styrene-maleic anhydride copolymer has the general formula:

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15 where counter-ion M^+ is selected from the group consisting of sodium, potassium, ammonium, trimethylammonium, and lithium.

9. (original) The inkjet ink set of Claim 8 wherein said copolymer has a molar ratio of styrene to maleic anhydride repeat units within a range of from 0.2 to 5.

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10. (original) The inkjet ink set of Claim 9 wherein said molar ratio is within a range of from 0.5 to 2.

11. (original) The inkjet ink set of Claim 8 wherein said copolymer has 25 a molecular weight within a range of about 500 to 50,000 (molecular weight average).

12. (original) The inkjet ink set of Claim 11 wherein said molecular weight is within a range of about 1,000 to 10,000.

5 13. (original) The inkjet ink set of Claim 1 wherein said styrene-maleic anhydride copolymer has a concentration in said ink of about 0.1 to 10 wt%.

14. (original) The inkjet ink set of Claim 13 wherein said styrene-maleic anhydride copolymer has a concentration of about 0.1 to 3 wt%.

10 15. (currently amended) The inkjet ink set of Claim 1 wherein said at least one color ink includes multivalent salts include at least one said multi-valent cation.

15 16. (original) The inkjet ink set of Claim 15 wherein said at least one multi-valent cation is selected from the group consisting of alkaline metal earths of Group 2A of the Periodic Table, transition metals of Group 3B of the Periodic Table, cations from Group 3A of the Periodic Table, lanthanides, and mixtures thereof.

20 17. (original) The inkjet ink set of Claim 16 wherein said at least one multi-valent cation is selected from the group consisting of magnesium, calcium, lanthanum, aluminum, neodymium, and mixtures thereof.

25 18. (original) The inkjet ink set of Claim 15 wherein said at least one multi-valent cation is present in an amount of about 1 to 10 wt% of said at least one color ink.

19. (previously presented) The inkjet ink set of Claim 1 wherein said at least one color ink includes at least one said organic acid.

30 20. (canceled)
21. (canceled)

22. (currently amended) The inkjet ink set of Claim 20 1 wherein said at least one organic acid is present in an amount of about 0.25 to 20 wt% of said at least one color ink.

5 23. (original) The inkjet ink set of Claim 22 wherein said at least one organic acid is present in an amount of about 1 to 5 wt% of said at least one color ink.

10 24. (currently amended) A method of controlling bleed between a black pigment-based inkjet ink and a color inkjet ink, said black pigment-based ink including at least one black pigment, said method comprising formulating said black ink with a polymer, wherein said polymer comprises a hydrolyzed form of styrene-maleic anhydride copolymer and wherein said at least one color ink includes a component selected from the group consisting of multivalent salts and
15 organic acids that interacts with said polymer ~~to control said black to color bleed at appropriate pH by rendering said pigment dispersed with said polymer in said black ink insoluble by transforming said polymer into a water-insoluble protonated form,~~
~~and wherein said organic acids are selected from the group consisting of: poly-~~
20 ~~acrylic, acetic, glycolic, malonic, malic, maleic, ascorbic, succinic, glutaric, fumaric, citric, tartaric, lactic, sulfonic, ortho-phosphoric acids and mixtures thereof.~~

25 25. (original) The method of Claim 24 wherein said self-dispersed black pigment has a concentration in said ink of about 0.001 to 10 wt%.

26. (original) The method of Claim 24 wherein said black pigment is self-dispersed.

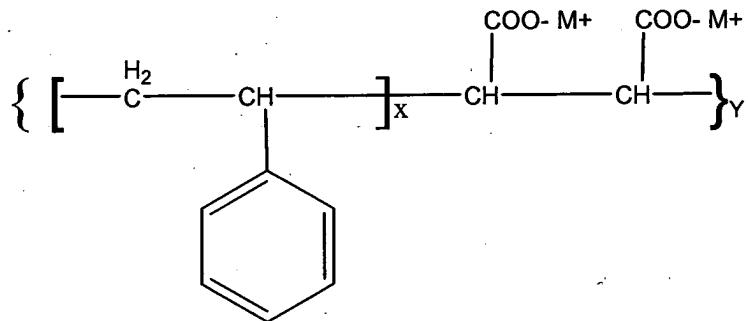
30 27. (original) The method of Claim 24 wherein said cosolvent has a concentration in said ink of about 0.01 to 50 wt%.

28. (original) The method of Claim 24 wherein said at least one surfactant/amphiphile has a concentration in said ink of up to 40 wt%.

29. (original) The method of Claim 28 wherein said at least one surfactant/amphiphile has a concentration of about 0.1 to 5 wt%.

30. (original) The method of Claim 24 wherein said water comprises the balance of said ink.

31. (original) The method of Claim 24 wherein said styrene-maleic anhydride copolymer has the general formula:



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(I)

where counter-ion M^+ is selected from the group consisting of sodium, potassium, ammonium, trimethylammonium, and lithium.

32. (original) The method of Claim 31 wherein said copolymer has a molar ratio of styrene to maleic anhydride repeat units within a range of from 0.2 to 5.

33. (original) The method of Claim 32 wherein said molar ratio is within a range of from 0.5 to 2.

34. (original) The method of Claim 31 wherein said copolymer has a molecular weight within a range of about 500 to 50,000 (molecular weight average).

5 35. (original) The method of Claim 34 wherein said molecular weight is within a range of about 1,000 to 10,000.

36. (original) The method of Claim 34 wherein said styrene-maleic anhydride copolymer has a concentration in said ink of about 0.1 to 10 wt%.

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37. (original) The method of Claim 36 wherein said styrene-maleic anhydride copolymer has a concentration of about 0.1 to 3 wt%.

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38. (currently amended) The method of Claim 24 wherein said color ink includes multi-valent salts include at least one said multi-valent cation.

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39. (original) The method of Claim 38 wherein said at least one multi-valent cation is selected from the group consisting of alkaline metal earths of Group 2A of the Periodic Table, transition metals of Group 3B of the Periodic Table, cations from Group 3A of the Periodic Table, lanthanides, and mixtures thereof.

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40. (original) The method of Claim 39 wherein said at least one multi-valent cation is selected from the group consisting of magnesium, calcium, lanthanum, aluminum, neodymium, and mixtures thereof.

41. (original) The method of Claim 38 wherein said at least one multi-valent cation is present in an amount of about 1 to 10 wt% of said color ink.

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42. (currently amended) The method of Claim 24 wherein said at least one color ink includes at least one said organic acid.

43. (canceled)

44. (canceled)

45. (original) The method of Claim 24 wherein said at least one organic acid is present in an amount of about 0.25 to 20 wt% of said at least one color
5 ink.

46. (original) The method of Claim 45 wherein said at least one organic acid is present in an amount of about 1 to 5 wt% of said at least one color ink.